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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/573,829	BRICCARELLO ET AL.
	Examiner	Art Unit	
	KENNETH TANG	2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>29 March 2006</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-42</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-42</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>29 March 2006</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>3/29/06</u>.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail. Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 22-42 are presented for examination.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or
> any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and
> requirements of this title.

2.   Claim 42 is directed to non-statutory subject matter.

3.   Claim 42 is directed to a computer program product or computer program. Claims

directed to software, per se, do not fall under one of the four statutory categories of inventions, as

described in 35 USC 101. Therefore, claim 42 is directed to non-statutory subject matter.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United
> States before the invention thereof by the applicant for patent, or on an international application by another who
> has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention
> thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999

(AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002

do not apply when the reference is a U.S. patent resulting directly or indirectly from an

international application filed before November 29, 2000. Therefore, the prior art date of the

reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA

35 U.S.C. 102(e)).

4.   Claims 22-23, 26-27, and 35-42 are rejected under 35 U.S.C. 102(e) as being

anticipated by Lesaint et al. (hereinafter Lesaint) (US 6,578,005 B1).

5.   As per claim 22, Lesaint teaches a method of tuning a scheduling process for assigning

tasks to resources of a workforce management system, the scheduling process being arranged for

calculating a work plan or work plan data on the basis of resources availability and tasks to be

carried out by said resources and as a function of predetermined scheduling parameters (see

Abstract), comprising the following steps:

        acquiring scheduling parameters data, resources availability data and tasks data

concerning tasks to be carried out (col. 7, lines 48-67; col. 3, lines 15-23);

        selectively modifying at least a predetermined subset of said scheduling parameters data

(col. 3, lines 24-28);

        running the scheduling process on the basis of scheduling parameters, resources

availability and task data, for each modified scheduling parameters data, to calculate respective

work plans (col. 12, lines 52-67; col. 10, lines 14-25);

        acquiring target data including one or more targets which form the basis for the

evaluation of work plans (col. 2, lines 62-64);

        applying a score function to each of said calculated work plans for calculating respective

score values representative of the degree of achievement of said one or more targets by each

calculated work plan (col. 7, lines 53-67; col. 12, lines 60-63); and

selecting the work plan to be used (via highest priority) by said workforce management

system as the work plan being attributed a score value complying with a predetermined degree of

achievement of one or more targets (col. 7, lines 53-67; col. 12, lines 52-63; col. 18, lines 27-67,

etc.).

6.   As per claim 23, Lesaint teaches wherein the score function is selected from a plurality of

functions based on said target data (col. 12, lines 52-63).

7.   As per claim 26, Lesaint teaches wherein said target data comprises <u>at least one</u> of the

following targets:

        respecting appointments arranged with customers (col. 18, lines 65-67);

        increasing the volume of tasks assigned for different activity types and

services;

        increasing the volume of backlog tasks assigned for different activity types

and services;

        balancing the workload between resources;

        optimising resources travel time (col. 18, lines 27-30);

        achieving Service Level Agreement for different activity types and

services; and

        assigning tasks of the most appropriate resource (Abstract).

8.   As per claim 27, Lesaint teaches wherein said subset of work plan data comprises data

concerning resources, comprising at least one of the following:

        number of resources employed by the scheduling (col. 11, lines 10-22);

        total resource idle time;

        total resource travelling time (col. 13, lines 38-43);

        total number of available resources (col. 2, lines 62-64);

        total resource working time;

        and/or data concerning tasks, comprising at least one of the following:

        total number of tasks assigned to resources by the algorithm;

        total number of tasks with appointment assigned to resources by the algorithm;

        total number of tasks with higher priority assigned to resources by the

algorithm;

        number of tasks assigned to resources by the algorithm for different type of activities and

services; and

        total number of tasks that the algorithm could assign (col. 12, lines 18-19).

9.   As per claim 35, Lesaint teaches wherein parameters, resource and task data are retrieved

from a database of said workforce management system (Fig. 4; items 40-44).

10.   As per claim 36, Lesaint teaches wherein parameters, resource and task data are retrieved

from trace files produced by a Work Manager Server of said workforce management system at

any execution of the scheduling algorithm (col. 10, lines 21-25).

11.   As per claim 37, Lesaint teaches wherein said modified subset of scheduling parameters
and said target data are input by an operator of said workforce management system (Fig. 4; items
40-44; col. 2, lines 62-64).

12.   As per claim 38, Lesaint teaches wherein said scheduling parameters comprise data
concerning the distribution of resources over geographical areas, input by an operator of said
workforce management system (Fig. 4; items 40-44; col. 2, lines 62-64; col. 5, lines 23-51).

13.   As per claim 39, Lesaint teaches wherein score results of said evaluation of work plans
are displayed to an operator as a list of calculated scores (col. 12, lines 52 through col. 13, line
12).

14.   As per claim 40, Lesaint teaches a system for tuning a task scheduling process (see
Abstract), comprising:

        memory modules for storing data concerning scheduling parameters, resources
availability and tasks to be carried out (Fig. 4, items 40-44);

        a user-interface module including a parameter input unit for modifying data concerning
said scheduling parameters, a target input unit for establishing one or more targets which form
the basis for the evaluation of work plans, and a display for displaying the results of said
evaluation of work plans (col. 2, line 60 through col. 3, line 34; Fig. 4, items 40-45; Fig. 2,
Visual Display Unit - VDU - item 23); and

a processing module for calculating work plans from said data concerning scheduling parameters, resources availability and tasks (Fig. 4, items 40-44, 47; col. 11, lines 10-34); and

a score module associated with said processing module for assigning a score value to said calculated work plans according to a selected score function, which score value is related to the degree of achievement of said one or more targets (col. 7, lines 53-67; col. 12, lines 60-63; col. 18, lines 27-67, etc.).

15.   As per claim 41, Lesaint teaches wherein said task scheduling process is applied to a telecommunications network (col. 1, lines 9-20; col. 6, lines 51-58).

16.   As per claim 42, Lesaint teaches a computer program product or computer program capable of being set to run on a computer system, comprising a code for carrying out a method of tuning a task scheduling process according to any one of claims 22 to 39 (see Title and Abstract).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

17.   **Claims 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lesaint et al. (hereinafter Lesaint) (US 6,578,005 B1) in view of Bushey et al. (hereinafter Bushey) (US 6,389,400 B1).**

18.   As per claim 24, Lesaint does not expressly teach wherein the score function is a function

operating on a subset of work plan data and comprises the step of associating to the score

function an absolute integer value belonging to a predetermined limited range of values, a first

end of which represents a condition of maximum deviation from target and the second end of

which represents a condition of target substantially achieved. However, Bushey teaches wherein

the score function is a function operating on a subset of work plan data and comprises the step of

associating to the score function an absolute integer value belonging to a predetermined limited

range of values (from 0 to 100), a first end (score of 0) of which represents a condition of

maximum deviation from target and the second end (score of 100) of which represents a

condition of target substantially achieved (col. 9, lines 1-31; col. 13, lines 53-54; col. 14, lines

18-19). Lesaint and Bushey are analogous art because they are in the same field of endeavor of

assigning tasks to resource of a workforce management system. Thus, it would have been

obvious to modify the scoring system of Lesaint's workforce management system, such that it

would include the feature of it operating on a subset of work plan data and comprises the step of

associating to the score function an absolute integer value belonging to a predetermined limited

range of values, a first end of which represents a condition of maximum deviation from target

and the second end of which represents a condition of target substantially achieved, as taught and

suggested in Bushey. The suggestion/motivation for doing so would have been to provide the

predicted result of being able to easily identify best match scores (Abstract; col. 8, lines 25-30).

It would have been obvious to have the value of 100 associated with the best score because it

resembles 100%, which is conventionally recognized.

19.　　As per claim 25, Bushey teaches wherein said range of values is 0 to 100, wherein the

lower limit represents a condition of maximum deviation from the target data, and the upper limit

represents a condition of target data substantially achieved, and the work plan to be used by the

workforce management system is the work plan having the highest (best) score (col. 9, lines 1-

31; col. 13, lines 53-54; col. 14, lines 18-19).

20.　　Claims 28-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Lesaint et al. (hereinafter Lesaint) (US 6,578,005 B1) in view of Haq et al. (hereinafter Haq)

(US 6,275,812 B1).

21.　　As per claim 28, Lesaint does not expressly teach wherein the score function operates on

the subset of work plan data by comparing a first numerical value associated with a first

collection of said data with at least a second numerical value associated with a second collection

of said data; and the score result is within a range of values extending from a lower limit

corresponding to a condition of greatest distance between said first and second numerical value,

to an upper limit corresponding to a condition of smallest distance or coincidence between said

first and second numerical value. However, Haq teaches wherein the score function operates on

the subset of work plan data by comparing a first numerical value associated with a first

collection of said data with at least a second numerical value associated with a second collection

of said data (col. 8, lines 8-40); and the score result is within a range of values (score from 0 to

100) extending from a lower limit corresponding to a condition of greatest distance between said

first and second numerical value (score of 0), to an upper limit corresponding to a condition of

smallest distance or coincidence between said first and second numerical value (score of 100)

(col. 4, lines 27-28). Lesaint and Haq are analogous art because they are in the same field of

endeavor of assigning tasks to resource of a workforce management system. Thus, it would have

been obvious to modify the scoring system of Lesaint's workforce management system, such that

it would include the feature of wherein the score function operates on the subset of work plan

data by comparing a first numerical value associated with a first collection of said data with at

least a second numerical value associated with a second collection of said data; and the score

result is within a range of values extending from a lower limit corresponding to a condition of

greatest distance between said first and second numerical value, to an upper limit corresponding

to a condition of smallest distance or coincidence between said first and second numerical value,

as taught and suggested in Haq. The suggestion/motivation for doing so would have been to

provide the predicted result of being able to easily identify best match score. As shown in col. 4,

lines 27-28, it would be obvious to use the example of a 0-100 scale in determining score

because it is a standard that is conventionally recognized.

22.   As per claim 29, Haq teaches wherein the score function calculates the ratio between said

first numerical value and said second numerical value (col. 8, lines 19-26). Although Haq

teaches calculating the result as a percentage, it would be obvious to use the integer form of this

value as disclosed in Lesaint if an integer form is desired to be presented rather than the form of

a percentage.

23.   As per claim 30, Haq teaches the formulas as claimed for a target of increasing the

volume of tasks assigned for different activity types and services (col. 8, line 59 though col. 9,

line 9).

24.   As per claim 31, Haq teaches the formula as claimed for a target of balancing the

workload between resources (col. 8, lines 34-40). Although Haq teaches calculating the result as

a percentage, it would be obvious to use the integer form of this value as disclosed in Lesaint if

an integer form is desired to be presented rather than the form of a percentage.

25.   As per claim 32, Haq teaches the formula as claimed for a target of optimising travel time

(col. 8, lines 19-28). Although Haq teaches calculating the result as a percentage, it would be

obvious to use the integer form of this value as disclosed in Lesaint if an integer form is desired

to be presented rather than the form of a percentage.

26.   As per claim 33, Lesaint does not expressly teach wherein a score function is defined for

calculating a respective value representative of the degree of achievement of multiple targets i

with priorities, and at least of a target j with a score not under a predetermined threshold T, as a

function F' of a plurality of score functions f_i related to respective targets specified in input and

said threshold, according to the claimed mathematical relationship. However, Haq teaches this

claimed mathematical relationship, wherein the summation represents the points that are totaled

for each column of (33)(34)(35) (col. 4, lines 55-60). Lesaint and Haq are analogous art because

they are in the same field of endeavor of assigning tasks to resource of a workforce management

system. Thus, it would have been obvious to modify the scoring system of Lesaint's workforce

management system, such that it would include the feature of the claim 33's mathematical

relationship, as taught and suggested in Haq. The suggestion/motivation for doing so would

have been to provide the predicted result of taking into consideration all of the skills when

calculating the points or scores (col. 4, lines 26-67; Abstract).

27.   As per claim 34, it is rejected for similar reasons as stated in the rejections of claims 22

and 33. While the mathematical relationship of Haq does not take into consideration priority for

the targets, Lesaint teaches this feature and it would be obvious to utilize this teaching in order to

determine importance so that the order of selection can be determined (col. 12, lines 52-67, etc.).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure:

- US 6,278,978 B1;

- US 2003/0055705 A1;

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to KENNETH TANG whose telephone number is (571)272-3772.

The examiner can normally be reached on 9:00AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kenneth Tang/
Examiner, Art Unit 2195